Reviewer’s report

Title: Concomitant septic arthritis and osteomyelitis of the hip in young children; a new pathophysiological hypothesis suggested by MRI enhancement pattern

Version: 2
Date: 17 November 2014
Reviewer: Markus Pääkkönen

Reviewer's report:

Interesting and well written report that presents a new hypothesis that septic arthritis may lead to epiphyseal OM. This would somewhat contradict the traditional model of pathogenesis of OM, but the classic hypotheses were formed before the era of MRI. This is stated to be a new hypothesis, although authors refer to observations of Alderson et al. From the text it is not completely clear, as to what part of the hypothesis is new and what was already known from previous observations. Also, an alternative hypothesis – the inability of MRI to detect early osteomyelitis – is given.

Major compulsory revisions
1. Currently I had found it a bit difficult to follow the flow of logic. Also, strong evidence is required to create new theory. Systematic approach would be to explain the findings, evaluate the reliability, note the indisputable anomalies that cannot be explained by the current theory and only then discuss alternative theory that could be used to explain the finding.

Minor essential revisions:
1. What was the duration of symptoms in each patient when the MRI was done?
2. Data on fever, CRP and ESR on admission would be interesting.
3. Describe the follow-up in detail. Was the x-ray one month later taken in all cases? Was there further follow-up?
4. Authors present an alternative hypothesis that possibly MRI could not detect osteomyelitis on admission. MRI is the current gold standard of imaging. Would it not be extremely unlikely that so many cases would have been missed?

Discretionary revisions
1. Conclusions: Try to make this chapter more concise.

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Acceptable

Statistical review: No, the manuscript does not need to be seen by a statistician.
Declaration of competing interests:

No competing interests.